

CLAIMS

We claim:

1 1. An apparatus for mounting computer components in an enclosure, the
2 apparatus comprising:

3 at least one fastener coupled to a frame, the fastener being adapted for
4 connecting to an enclosure without requiring the use of a tool;
5 at least one guide pin coupled to the frame, the pin being adapted to
6 receive a computer component for attachment of the component to the
7 apparatus; and
8 a release member coupled to a frame, the release member being resilient
9 and being adapted for attaching a computer component to the
10 connection apparatus by engaging the computer component, wherein
11 manipulation of the release member releases the computer component
12 from the connection apparatus.

1 2. The apparatus of claim 1, wherein the apparatus does not require the use of
2 tools for mounting computer components in an enclosure or releasing
3 computer components from an enclosure.

1 3. The apparatus of claim 1, wherein the apparatus is adapted for attachment to
2 at least one support structure in an enclosure by securing the
3 apparatus to at least one hole in the support structure.

1 4. The apparatus of claim 1, wherein pressing the release member toward the
2 fastener releases the computer component from the connection
3 apparatus.

1 5. The apparatus of claim 1, further comprising at least one resting ledge that
2 supports the computer component while the component is attached to
3 the apparatus.

1 6. The apparatus of claim 1, wherein at least one fastener further comprises a
2 release plunger slidably connected to the frame, wherein a tip portion
3 of the plunger rests inside a hole in the frame and a spring biases the
4 release plunger toward the fastener.

1 7. The apparatus of claim 6, wherein pulling the release plunger away from the
2 hole in the frame allows release of the apparatus from the enclosure

1 8. The apparatus of claim 1, wherein at least one fastener further comprises two
2 front fastener arms and one rear fastener arm for attaching to holes in
3 a support structure of an enclosure.

1 9. The apparatus of claim 1, wherein the apparatus comprises two detachable
2 parts, a first part comprising a first frame coupled to at least one
3 fastener and at least one guide pin, and a second part comprising a
4 second frame coupled to the release member.

1 10. The apparatus of claim 8, further comprising at least one tab coupled to the
2 second frame to prevent substantial rotation of the computer
3 component attached to the apparatus.

1 11. The apparatus of claim 1, further comprising a resting pocket for supporting
2 the edge of the computer component on the apparatus.

1 12. The apparatus of claim 1, further comprising a pivotable bar that engages the
2 computer component as mounting holes on the component slide onto
3 at least one guide pin, wherein the pivotable bar pivots to secure the
4 component against a frame of the mounting apparatus and a notched
5 edge of the bar engages a threaded portion on the release member to
6 lock the bar into position.

1 13. The apparatus of claim 12, further comprising at least one tab coupled to the
2 second frame to prevent substantial rotation of the computer
3 component attached to the apparatus.

1 14. A system for mounting computer components in an enclosure, the enclosure
2 having at least one support member, the system comprising:

3 a means for securing at least one computer component to a support
4 member of the enclosure without requiring the use of tools, the means
5 being further adapted for unsecuring the at least one computer
6 component to a support member of the enclosure without requiring

7 the use of tools, wherein the means is detachable from the support
8 member.

1 15. The system of claim 10, wherein the means is attached and detached from
2 the support member without requiring the use of tools.

1 16. A method for attaching computer components in an enclosure by attaching a
2 mounting apparatus to the enclosure and attaching a computer component to the
3 mounting apparatus that is adapted to receive computer components, the method
4 comprising:

5 connecting a mounting apparatus to a support member of an enclosure by
6 attaching at least one fastener of the mounting apparatus to the
7 enclosure without the use of a tool;

8 engaging a computer component with a least one guide pin of the
9 mounting apparatus that is adapted to receive computer components;
10 and

11 securing the computer component to the mounting apparatus by engaging
12 the computer component with a release member of the mounting
13 apparatus without the use of the tool.

1 17. The method of claim 16, wherein connecting a mounting apparatus to a
2 support member further comprises moving the mounting apparatus against the support
3 structure to slide two front fasteners and one back fastener into holes in the support
4 member of the enclosure.

1 18. The method of claim 16, wherein connecting a mounting apparatus to a
2 support member further comprises moving the mounting apparatus against the support
3 structure to slide a tip of a release plunger into a hole in the support member of the
4 enclosure.

1 19. The method of claim 16, wherein engaging a computer component with at
2 least one guide pin of the mounting apparatus further comprises moving the computer
3 component against the mounting apparatus to slide two guide pins into mounting holes
4 in the computer component.

1 20. The method of claim 16, wherein securing the computer component to the
2 mounting apparatus by engaging the computer component with a release member of the
3 mounting apparatus further comprises moving the computer component against the
4 release member to press the release member toward the support structure.

1 21. The method of claim 20, wherein moving the computer component against
2 the release member to press the release member toward the support structure further
3 comprises moving the computer component to such a distance that the release member
4 returns to its original position on the other side of the component, thereby securing the
5 component between a frame of the mounting apparatus and the release member

1 22. The method of claim 16, further comprising resting the edge of the computer
2 component on a ledge attached to a frame of the mounting apparatus.

1 23. The method of claim 16, wherein securing the computer component to the
2 mounting apparatus further comprises using at least one tab to secure the release member

3 in a position that secures the computer component on the mounting apparatus and
4 prevents substantial rotation of the computer component.

1 24. The method of claim 16, further comprising moving the edge of the
2 computer component into a resting pocket in the mounting apparatus to engage mounting
3 holes in the component with two tabs to secure the component onto the mounting
4 apparatus.

1 25. The method of claim 16, further comprising pivoting a bar to engage the
2 computer component and slide mounting holes in the component onto at least one guide
3 pin, wherein the bar pivots to secure the component against a frame of the mounting
4 apparatus and a notched edge of the bar engages a threaded portion on the release
5 member to lock the bar into position.

1 26. A method for detaching computer components in an enclosure by detaching
2 a computer component from a mounting apparatus that is adapted to receive computer
3 components and detaching a mounting apparatus from the enclosure, the method
4 comprising:

5 unsecuring the computer component from a mounting apparatus that is
6 adapted to receive computer components by manipulating a release
7 member of the mounting apparatus to disengage the computer
8 component without the use of a tool;

9 disengaging the computer component from at least one guide pin of the
10 mounting apparatus; and

11 disconnecting a mounting apparatus from a support member of an
12 enclosure by detaching at least one fastener of the mounting apparatus
13 from the enclosure without the use of the tool.

1 27. The method of claim 27, wherein unsecuring the computer
2 component from a mounting apparatus by manipulating a release member further
3 comprises pressing the release member toward the support member to slide the computer
4 component away from the mounting apparatus.

1 28. The method of claim 28, wherein pressing the release member toward the
2 support member to slide the component away from the mounting apparatus further
3 comprises the release member returning to the original position once the component has
4 moved a certain distance away from the mounting apparatus.

1 29. The method of claim 27, wherein disengaging the computer component from
2 at least one guide pin of the mounting apparatus further comprises moving the computer
3 component away from the apparatus to slide mounting holes on the component off of
4 two guide pins of the mounting apparatus.

1 30. The method of claim 27, wherein disconnecting a mounting apparatus from a
2 support member of an enclosure by detaching at least one fastener of the mounting
3 apparatus from the enclosure further comprises pulling a release plunger away from the
4 support structure to slide a tip of the plunger out of a hole in the support structure.

1 31. The method of claim 27, wherein disconnecting a mounting apparatus from a
2 support member of an enclosure by detaching at least one fastener of the mounting
3 apparatus from the enclosure further comprises moving the computer component against

4 the support structure to slide two front fasteners and one back fastener out of holes in the
5 support structure

1 32. The method of claim 27, further comprising pressing at least one tab toward
2 the mounting apparatus to release the computer component and move the edge of the
3 computer component out of a resting pocket in the mounting apparatus.

1 33. The method of claim 27, further comprising pivoting a bar to release the
2 computer component and slide mounting holes in the component off of at least one guide
3 pin, wherein pressing on the release member disengages a notched edge of the bar from a
4 threaded portion on the release member to allow the bar to pivot.